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This Form Based on PTO/SB/21 **TRANSMITTAL Application Number** 10/602,815 FORM (to be used for all correspondence after initial filing) **Filing Date** June 25, 2003 **First Named Inventor** TAKIZAWA et al. **Group Art Unit** 3742 MAY 1 8 2006 THAD EN MA **Examiner Name** FASTOVSKY, Leonid M. Attorney Docket Number 28-001 ENCLOSURES (check all that apply) After Allowance Communication Assignment Papers Fee Transmittal Form (for an Application) to Group Appeal Communication to Board Fee Attached Drawing(s) of Appeals and Interferences Appeal Communication to Group Amendment / Response Licensing-related Papers (Appeal Notice, Brief, Reply Brief) Petition Routing Slip (PTO/SB/69) and Accompanying Petition After Final Proprietary Information To Convert a Affidavits/declaration(s) Status Letter **Provisional Application** Power of Attorney, Revocation Change of Correspondence Address Additional Enclosure(s) **Extension of Time Request** (please identify below): **Express Abandonment** Request for Certificate of Terminal Disclaimer Request Correction Information Disclosure Copy of as-filed Amendment Small Entity Statement Statement (15-pages) Certified Copy of Priority Certificate of Correction X Request of Refund Document(s) Response to Missing Parts/ Copy of Original Letters Patent Incomplete Application Remarks Certificate MAY 2 2 2006

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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name

Posz Law Group, PLC

Signature

Date

May 18, 2006

Response to Missing Parts under 37 CFR

1.52 or 1.53

of Correction

# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

MAY 1 8 2006

Applicant(s): TAKIZAWA et a

Serial No.: 10/602,815

Filed: June 25, 2003

Title: INPUT/OUTPUT SYSTEM

Commissioner for Patents Alexandria, VA 22313-1450

Mail Stop: Certificate of Corrections

Patent No.: 6,942,624

Issued: September 13, 2005

Atty. Dkt.: 28-001

Date: May 1& 2006

### REQUEST FOR CERTIFICATE OF CORRECTION

Sir:

Applicants hereby request that the above-identified Letters Patent be corrected to correct Claims 1, 3 and 7 on pages 19 and 20 of the patent. Specifically, the claims should be corrected to read as:

- 1) In claim 1: "a plurality of sensor elements disDosed thereon and wiring for the plurality of sensor elements"; should read "a plurality of sensor elements disposed thereon and wiring for the plurality of sensor elements";
- 2) In claim 1: "means for fixing the edae of the sheet-like sensor unit that"; should read "means for fixing the edge of the sheet-like sensor unit that";
- 3) In claim 3: "at least one projection disDosed behind the edges of the slit for fixing the edae of the sheet-like sensor unit"; should read "at least one projection disposed behind the edges of the slit for fixing the edge of the sheet-like sensor unit";
- 4) In claim 7: "the plurality of sensor elements are disposed wiring region that is disposed along side of the data input region"; should read "the plurality of sensor elements are disposed and a wiring region that is disposed along side of the data input region".

Claims 1, 3, and 7 were corrected during prosecution. An as-filed copy of an Amendment in which the claims were correctly listed is attached as proof that this error was due to a mistake made by the USPTO.

Applicants also request that the attached Certificate of Correction be attached to all copies of the Letters Patent.

To facilitate the above request, a copy of the original letters patent is enclosed.

Authorization is hereby given to charge any fee deficiencies or credit any overpayment to Deposit Account 50-1147.

Respectfully submitted.

David G. Posz

Reg. No. 37,701

Posz Law Group, PLC 12040 South Lakes Drive, Suite 101 Reston, VA 20191 (703) 707-9110 Customer No. 23400

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## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO.

: 6,942,624

APPLICATION NO.: 10/602,815

ISSUE DATE

: September 13, 2005

INVENTOR(S)

Shun Takizawa

Yuichi Minamiyama

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

#### Claims

Column 14, line 19, cancel the text in claim 1 beginning with "a plurality of sensor elements disDosed" to and ending with "sensor elements" in column 14, line 20, and insert the following: "a plurality of sensor elements disposed thereon and wiring for the plurality of sensor elements;"

Column 14, line 34, cancel the text in claim 1 beginning with "means for fixing the edae of the sheet-like sensor unit that" in column 14, line 34, and insert the following "means for fixing the edge of the sheet-like sensor unit that":

Column 14, line 47, cancel the text in claim 3 beginning with "at least one projection" to and ending with "sensor unit" in column 14, line 49, and insert the following "at least one projection disposed behind the edges of the slit for fixing the edge of the sheet-like sensor unit".

Column 15, line 7, cancel the text in claim 7 beginning with "the plurality of sensor elements" to and ending with "data input region" in column 15, line 9, and insert the following "the plurality of sensor elements are disposed and a wiring region that is disposed along side of the data input region."

MAILING ADDRESS OF SENDER (Please do not use customer number below):

POSZ LAW GROUP, PLC.

12040 South Lakes Drive, Suite 101

Reston, Virginia 20191

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Takizawa et al.

Serial No.: 10/602,815

Filed: 6/29/2003

Title: INPUT/OUTPUT SYSTEM

Atty. Dkt.: 28-001

Art Unit: 3742

Examiner: Leonid M. FASTOVSKY

Commissioner for Patents
U.S. Patent and Trademark Office
220 20<sup>th</sup> Street S.
Customer Window, Mail Stop Amendment
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202

Date: 31 August 2004

## **AMENDMENT UNDER 37 CFR 1.111**

Sir:

In response to the office action mailed 2 June 2004, please amend the application as follows:

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of claims that begins on page 3 of this paper.

Remarks begin on page 10 of this paper.

#### **AMENDMENTS TO THE SPECIFICATION**

(1) On page 1 of the specification, please replace the title "INPUT/OUTPUT SYSTEM" with the following:

#### BIOLOGICAL INFORMATION DETECTION SYSTEM

(2) On page 4 to page 5 of the specification, please replace the paragraph beginning "An input/output system" with the following amended paragraph:

An input/output system (or "biological information detection system") according to the present invention includes a sheet-like input/output unit (or "sensor unit") that includes wiring and a connection box that is attached to an edge of the sheet-like input/output unit, wherein the connection box includes a housing that is attached so as to sandwich the sheet-like input/output unit and internally encloses a circuit board that is connected to the wiring. The housing includes: a slit through which the sheet-like input/output unit passes and whose upper and lower edges are rounded or curved shape; and a means for fixing the sheet-like input/output unit that is disposed inside to the slit. The sheet-like input/output (input-output) unit may be a unit that performs only input or only output, or a unit that performs input and output. The input/output (input-output) system may be a system that performs only input or only output, or a system that performs input and output.

# **LISTING OF CLAIMS:**

1. (Amended) AnA biological information detection input/output system, comprising:

a sheet-like input/output sensor unit that includes a sheet-like base material, a plurality of sensor elements disposed thereon and wiring for the plurality of sensor elements; and

a connection box that is attached to an edge of the sheet-like input/output sensor unit and connected to the plurality of sensor elements via the wiring,

wherein the connection box includes a housing that is attached so as to sandwich the <u>edge of the</u> sheet-like <u>input/output-sensor</u> unit and internally encloses a circuit board that is connected to the wiring, and

the housing includes:

a slit through which the edge of the sheet-like input/output sensor unit passes and whose upper and lower edges are curved shapes; and

means for fixing the edge of the sheet-like input/output-sensor unit that is disposed behind the edges of inside to the slit and inside of the housing.

2. (Amended) An input/output-A biological information detection system according to Claim 1,

wherein an edge, out of the upper and lower edges of the slit, that is above the sheet-like <u>input/output sensor</u> unit is composed of a sealing part that is elastic.

3. (Amended) A biological information detection An input/output system according to Claim 1,

wherein at least one hold is formed in an area of the <u>edge of the</u> sheet-like <u>input/output-sensor</u> unit that is sandwiched by the housing, and <u>wherein</u> the means for fixing <u>the edge of the sheet-like sensor unit includes at least one projection <u>disposed behind the edges of the slit</u> for fixing <u>the edge of the sheet-like input/output-sensor</u> unit by being inserted into the at least one hole of the sheet-like <u>input/output-sensor</u> unit <u>that is sandwiched by the edges of the slit</u>.</u>

4. (Amended) A biological information detection An input/output-system according to Claim 1,

wherein, in addition to the means for fixing the edge of the sheet-like sensor unit, the circuit board in the housing includes means for fixing a covering material of the wiring.

5. (Amended) A biological information detection An input/output system according to Claim 1,

wherein a plurality of circuit boards are enclosed on top of one another inside the housing and the circuit board to which the wiring is connected is disposed at the bottom of the plurality of circuit boards.

6. (Amended) A biological information detection An input/output system according to Claim 1,

wherein the sheet-like input/output sensor unit includes a data input region in which a-the plurality of piezoelectric sensors-sensor elements are disposed and a wiring region that is disposed along a side of the data input region.

7. (Amended) A biological information detection An input/output system according to Claim 1,

wherein the sensor elements are piezoelectric sensor elements, and the sheet-like input/output sensor unit includes a data input/output input region where the plurality of sensor elements are disposed that is equipped with a function for inputting and/or outputting data and a wiring region that is disposed along a side of the data input/output input region,

the wiring region includes first wiring that extends from the data input/output input region to a first edge of the sheet-like input/output sensor unit, and second wiring that is not connected to the data input/output-input region and extends from the first edge of the sheet-like input/output-sensor unit to a second edge opposite to the first edge,

the connection box is disposed on the first edge, and
the first wiring and the second wiring are connected to the circuit board.

8. (Amended) A biological information detection An input/output system according to Claim 7,

wherein the second wiring is disposed on an opposite side of the first wiring to the data input/output input region, and

on the first edge, the first wiring and the second wiring are disposed in parallel, and on the second edge, the second wiring is disposed at a position corresponding to a position of the first wiring on the first edge.

9. (Amended) A biological information detection An input/output system according to Claim 8,

wherein the first wiring on the first edge of another sheet-like input/output-sensor unit is connected to the second wiring on the second edge of the sheet-like input/output sensor unit.

10. (Amended) A biological information detection An input/output system according to Claim 8,

wherein third wiring that is not connected to the data <u>input/output input region</u>, that extends from the first edge to the second edge of the sheet-like <u>input/output sensor</u> unit, and that is connected to the circuit board is also disposed in the wiring region,

the third wiring is disposed on an opposite side of the second wiring to the data input/output input region, the first wiring, the second wiring and the third wiring are disposed in parallel on the first edge, and on the second edge, the third wiring is disposed at a position corresponding to a position of the second wiring on the first edge.

11. (Amended) A connection box that has a housing, the housing being attached to an edge of a sheet-like input/output-sensor unit that includes wiring so as to sandwich the sheet-

like input/output sensor unit and for internally housing a circuit board to which the wiring is connected,

wherein the housing includes:

a slit through which the edge of the sheet-like input/output-sensor unit passes and whose upper and lower edges are curved shapes; and

means for fixing the edge of the sheet-like input/output sensor unit that is disposed behind the edges of inside to the slit and inside of the housing.

- 12. (Canceled)
- 13. (Amended) A connection box according to Claim 11,

wherein the means for fixing the edge of the sheet-like sensor unit includes at least one projection disposed behind the edges of the slit for fixing the edge of the sheet-like input/output sensor unit by being inserted into at least one hole of the sheet-like input/output sensor unit that is sandwiched by the edges of the slit.

14. (Original) A connection box according to Claim 11,

wherein one edge, out of the upper and lower edges of the slit, is composed of a sealing part that is elastic.

15. (Amended) A sheet-like <u>input/output sensor</u> unit includes a data <u>input/output</u> input region that is equipped with a function for inputting and/or-outputting data where a plurality of sensor elements are disposed and a wiring region that is disposed along at least one side of the data <u>input/output-input</u> region,

the wiring region includes first wiring that extends from the data input/output input region to a first edge of the sheet-like input/output sensor unit, and second wiring that is not connected to the data input/output-input region and extends from the first edge of the sheet-like input/output-sensor unit to a second edge opposite to the first edge.

16. (Amended)

An input/output-A sheet-like sensor unit according to Claim 15,

wherein the second wiring is disposed on an opposite side of the first wiring to the data input/output-input region, and

on the first edge, the first wiring and the second wiring are disposed in parallel, and on the second edge, the second wiring is disposed at a position corresponding to a position of the first wiring on the first edge.

17. (Amended)

An input/output A sheet-like sensor unit according to Claim 16,

wherein the second wiring on the second edge of the sheet-like input/output

sensor unit is connected to first wiring on the first edge of another sheet-like input/output-sensor unit.

18. (Amended) An input/output A sheet-like sensor unit according to Claim 16,

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wherein third wiring that is not connected to the data <u>input/output-input</u> region, and that extends from the first edge to the second edge of the sheet-like <u>input/output-sensor</u> unit is also disposed in the wiring region,

the third wiring is disposed on an opposite side of the second wiring to the data input/output input region, the first wiring, the second wiring and the third wiring are disposed in parallel on the first edge, and on the second edge the third wiring is disposed at a position corresponding to a position of the second wiring on the first edge.

- 19. (Amended) An input/output-A sheet-like sensor unit according to Claim 15, wherein at corresponding positions on opposite edges, curved cuts are formed.
- 20. (Amended)

  An input/output A sheet-like sensor unit according to Claim 15,

  wherein a plurality of piezoelectric sensors are disposed in the data input/output
  input region.

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#### REMARKS

The applicants note with appreciation the acknowledgement of the claim for priority under section 119 and the notice that all of the certified copies of the priority documents have been received.

Claims 1-11 and 13-20 are pending. Claim 12 has been canceled without prejudice or disclaimer. The applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks.

In paragraph 2 of the office action, the examiner states that "input/output unit" and "data input/output region" are not defined in the specification. Further, in paragraph 3 of the office action, the examiner requires a new title and suggests "Biological information detection system." Accordingly, applicants have amended the specification to define input/output system as "biological information detection system, to define "sheet-like input/output unit" as "sensor unit," and to replace the title with "BIOLOGICAL INFORMATION DETECTION SYSTEM." Applicants respectfully request favorable action on the foregoing amendments.

In this connection, counsel for applicants wish to thank the examiner for initiating a telephonic interview on 9 August 2004, to discuss the Requirement for Information of paragraph 2 of the office action, as well as the Response to Requirement for Information filed on 29 June 2004. In the telephonic interview, summarized herein, the examiner agreed that the terms "input/output" are generally known terms. However, he still considered the phrase "input/output" to be too broad and therefore confusing. For example, he states that "input/output" could encompass non-electronic and non-electrical systems. The examiner suggested that the response to the Office Action amend the title and the claims to reflect, for

example, "<u>electronic</u> input/output." He also suggested amending the claims to be related to biotechnology systems or biomechanical devices, if appropriate.

Claims 1-20 were rejected under 35 USC 112, second paragraph, as being indefinite. Accordingly, these claims have been amended to overcome the rejection and to correct the deficiencies identified in the office action. The examiner is respectfully requested to withdraw the rejection thereto.

In paragraph 8 of the office action, Claims 1 – 4, 6 and 11 – 14 were rejected under 35 USC 103(a) as being unpatentable over U.S. Patent No. 5,448,996, Bellin ("Bellin") in view of U.S. Patent No. 5,550,324, Black ("Black"), further in view of U.S. Patent No. 6,095,844, Kasai ("Kasai"). The rejection is respectfully traversed for the following reasons, which are provided by way of example.

As described in the application, one or more aspects of the invention as claimed are directed to a biological information detection system or a sheet-like sensor unit. Independent claim 1 as amended recites, in combination, for example, "a connection box that ... includes a housing that is attached so as to sandwich the edge of the sheet-like sensor unit and internally encloses a circuit board that is connected to the wiring, and the housing includes: a slit through which the edge of the sheet-like sensor unit passes and whose upper and lower edges are curved shapes; and means for fixing the edge of the sheet-like sensor unit that is disposed behind the edges of the slit and inside of the housing." (See also claim 11, as amended.)

By way of background, the location of the fixing means was amended to recite a "means for fixing the edge of the sheet-like sensor unit that is disposed behind the edges of the slit and inside of the housing." The location behind the edge is clearly shown in the drawings, e.g., Figs. 2 and 3, and discussed in the specification, e.g., page 13, lines 4 - 20; page 14, lines 17 - 28.

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The edge of the sheet is sandwiched in between the curved edges of the slit and fixed behind the curved edges. Movement of the edge up and down (e.g., vertical to the plane of the sheet) is limited by the curved edges of the slit that sandwich the sheet, therefore, by fixing the sheet edge just behind the slit, whereby the sheet is not released and the sheet is not bent at the fixing means.

Bellin discloses patient monitor sheets. The office action concedes that Bellin "does not teach a connection box that is attached to the edge of the patient sheet and has a slit through which the patent sheet passes."

In order to cure the deficiencies of Bellin, the office action cites Black, and Kasai, alleging that Black "teaches a connection box that includes a housing that internally encloses a circuit board and has one end that is open and covered by an end plate," and that "Kasai teaches a connection box and a slanted slit through which a bus bar is inserted and means for fixing the bus in the slit."

To the contrary, in Kasai, there is no slit through which a sheet can be passed. Moreover, in Kasai, the slanted edge does not touch the material. In addition, Kasai's means 23, 26 and 27 (see, e.g., Fig. 4) are located outside, and therefore they cannot be used for fixing the sheet.

Nether Bellin nor Black teach or suggest a the connection box, housing or means for fixing as claimed. Kasai neither teaches nor suggests a connection box, housing or means for fixing. Indeed, any discussion of the slit in Kasai would be inapposite since the means 23, 26 and 27 are located outside. Consequently, neither Bellin nor Black teach or suggest, let alone disclose, anything concerning at least the connection box, housing, and means for fixing, as claimed in combination.

Moreover, there is no suggestion or motivation to combine the references. The office action provides no motivation to combine the references, other than a conclusory statement on

page 4 of the office action that it would have been obvious to "modify Bellin's invention to include a connection box of Black having the internally enclosed circuit board, and modify the open end of Black's housing to include a slit with curved edges instead of slanted edges as convention with fixing means in order to secure the bus bar" of Kasai. Bellin itself does not provide a motivation to combine its patient monitoring system with Black's connection box, modified as proposed, nor does Black or Kasai provide a motivation to offer a connection box modified as proposed.

Assuming arguendo, without admitting, that there is a motivation to combine the three references, the proposed modification would appear to change the principle of operation of either Bellin, Black, and/or Kasai. A combination utilizing curved edges of a slit for sandwiching the sheet, and fixing means for the sheet located just behind the slit edges are neither taught nor suggested in any of these references. The combination and modification as proposed in the office action would appear to require a substantial re-design of Bellin, Black and/or Kasai, in order to accommodate the combination as proposed by the examiner.

For at least these reasons, the combination of features recited in independent claim 1, when interpreted as a whole, is submitted to patentably distinguish over the prior art. In addition, the references clearly fail to show other claimed features as well.

In paragraph 9 of the office action, claim 5 was rejected under 35 USC 103(a) as being unpatentable over Bellin, Black and Kasai, further in view of U.S. Patent. No. 3,832,603, Cray et al. ("Cray"). The rejection is respectfully traversed for reasons including the following examples.

Claim 5 recites, in combination, "a plurality of circuit boards are enclosed on top of one another inside the housing and the circuit board to which the wiring is connected is disposed at the bottom of the plurality of circuit boards."

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The office action admits that Bellin, Black and Kasai fail to teach or suggest "a plurality of boards". Cray is cited to remedy the deficiencies of Bellin, Black and Kasai. To the contrary, Cray fails to teach or suggest the wiring of claim 5, included in the sheet-like sensor unit and leading signals outside the board. Reconsideration and withdrawal of the rejection is respectfully requested.

In paragraph 10 of the office action, claims 7 – 10 and 15 – 20 were rejected under 35 USC 103(a) as being unpatentable over Bellin in view of black and Kasai and further in view of U.S. Patent No. 6,210,339, Kiepen et al. ("Kiepen"). The rejection is respectfully traversed for reasons including the following examples.

Claims 7 and 15 recite, in combination, "second wiring that is not connected to the data input region and extends from the first edge of the sheet-like sensor unit to a second edge opposite to the first edge." Claim 8 recites, in combination, that "on the first edge, the first wiring and the second wiring are disposed in parallel, and on the second edge, the second wiring is disposed at a position corresponding to a position of the first wiring on the first edge."

The office action admits that Bellin, Black and Kasai fail to teach or suggest "a first wiring, a second wiring and a third wiring". Kiepen is cited to remedy the deficiencies of Bellin, Black and Kasai. To the contrary, referring to Kiepen, Col. 3 lines 15 – 29, and Fig. 3, Kiepen fails to teach or suggest that the second wiring is connected and disposed, as recited.

Moreover, with respect to the rejected dependent claims, applicant respectfully submits that these claims are allowable not only by virtue of their dependency from independent claim 1, but also because of additional features they recite in combination.

Applicants respectfully submit that, as described above, the cited prior art does not show or suggest the combination of features recited in the claims. Applicants do not concede that the

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Serial No. 10/602,815

cited prior art shown any of the elements recited in the claims. However, applicants have provided specific examples of elements in the claims that are clearly not present in the cited prior art.

Applicants strongly emphasize that one reviewing the prosecution history should not interpret any of the examples applicant has described herein in connection with distinguishing over the prior art as limiting to those specific features in isolation. Rather, for the sake of simplicity, applicant has provided examples of why the claims described above are distinguishable over the cited prior art.

In view of the forgoing, the applicants respectfully submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

Please charge any unforeseen fees that may be due to Deposit Account No. 50-1147.

Respectfully submitted,

Cynthia K. Nicholson

Reg. No. 36,880

Posz & Bethards, PLC 11250 Roger Bacon Drive, Suite 10 Reston, VA 20190 Phone 703-707-9110 Fax 703-707-9112 Customer No. 23400